DISN Two-Tiered Pricing FEA

PRG Brief

5 May 2000

Background

- Two-Tier structure for DISN directed by Deputy Secretary on 19 October 1999
- Rates for voice, data, video, and transmission to be established at or near commercial rates
- Costs not recovered through rates to be paid by Service Level Bill (SLB)
- Rates and costs of DISA's DWCF telecommunications activities to be reviewed by the Resource Management Committee
- FEA to perform this function for POM 02-07

FEA Tasking

FY02 Estimates ($M)

Review all costs and revenues to estimate Service Level Bills

- **Revenues**
  - Rate based
    - Voice $108.4
    - Data $120.0
    - Video $ 13.8
    - Trans $224.3

  $ 466.5

  - Service Level Bill
    - Army $ 43.7
    - USN/MC $ 53.4
    - USAF $ 51.9
    - Defensewide $ 24.5

  $ 173.5

- **Cost Categories**
  - Access Transmission $ 101.8
  - Backbone Transmission $ 269.3
  - Network Operations $230.3
  - Network Management $ 38.6

$ 640.0

DISN Requirements

- **DISN Provides Voice, Data, Video, and Transmission Services**
- **JROC Reviewed and Validated Requirements for Military Features of DISN Services**
  - **Mission Needs Statement**

    Integrated worldwide telecommunications infrastructure that supports transmission of voice, data and video at all security levels
  - **Capstone Requirements Document describes three major DISN infrastructure blocks**
    - **Sustaining base (base/post/station) C4I**
    - **Long-haul telecommunications**
    - **Deployed warfighter and CINC telecommunications supporting the JTF**

Methodology

- **Cost Tests**
  - Leases
  - Contracts
  - Purchases
  - Maintenance
  - Circuit support
  - Transition to Expanded DISN

- **Revenue Tests**
  - Rates v. Commercial Benchmark
  - Unit SLB/Unit Cost

Cost Tests

	BES FY00 ($K)		Indicators
Leased Circuits			
- Access Transmsn	$ 84,890	18%	Capacity appropriate?
- Backbone Transmsn	$ 223,434	46%	Market prices?
Contractor Support			
- Network Ops	$ 68,961	14%	Outsourcing needs?
- Network Mgt	$ 25,745	5%	Contract competition?
Equipment Purchases	$ 23,459	5%	Network improvements? Market prices?
Maintenance			
- Switches	$ 10,744	2%	Network availability?
- Other Equipment	$ 12,579	3%	
Engineering Support	$ 13,780	3%	Industry comparison?
Transition to DEP	$ 4,556	1%	Network improvements?
All Else	$ 15,428	3%	
Total	$ 483,576		

Leased Circuits

- **Current Network**
  - **Capacity**
    - **Backbone capacity sized appropriately given convergence of subsystems bandwidth - 75% avg worldwide usage**
    - **Access capacity currently undersized due to inadequate bandwidth from local exchange carriers - 95% avg worldwide usage**
  - **Market Pricing: DISN contract prices well below commercial; CONUS contracts negotiated in 1997 will save estimated 45% from previous contracts**
- **Future Considerations**
  - **Capacity: Network evolution will make more efficient use of bandwidth**
  - **Market Pricing: DISN Expansion ensures bandwidth pricing stays below market**

Contractor Support

- **90 percent of DISN DWCF Network Operations and Support Personnel are Contractors**
  - **Postured to quickly adapt to changing technology environment**
  - **More flexibility to respond to unsatisfactory performance**

Outsourcing jobs and the use of A-76 reviews will become more common.

Lt Gen Campbell, USA, Dir of Info Sys for C4

***Government Computer News*, Apr 17, 2000**

Equipment Purchases

- **Costs associated with Digital European Backbone upgrade (82%)**
  - **EUCOM requirement for government owned and operated Microwave Transmission Facility**
  - **Analysis of alternatives showed purchasing the upgrade was the least cost alternative**

    DISN - Europe Economic Analysis, December 5, 1997

- **Service-owned multi-function switches supporting DSN**
  - **DISA pays 1/3 of upgrade costs OCONUS**

Methodology

- **Cost Tests**
  - Leases
  - Contracts
  - Purchases
  - Maintenance
  - Circuit support
  - Transition to Expanded DISN
- **Revenue Tests**
  - Rates v. Commercial Benchmark
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Revenue v. Commercial Benchmark

	FY 00 Tier 2 Rate	Benchmark	Rate/ Benchmark
Voice	$/min	$/min	
CONUS-CONUS	$0.026	$0.028	93%
CONUS-Germany	$0.087	$0.130	67%
CONUS-Korea	$0.087	$0.130	67%
Data CONUS	$/month	$/month	
512 kbs	$2,025	$2,550	79%
768 kbs	$2,228	$2,550	87%
1.544 mbs	$2,430	$2,950	82%
Video	$/min	$/min	
CONUS	$0.90	$1.03	87%
Pacific	$1.00	$1.09	92%

Benchmarks

- **Groundrules**
  - FY00 rates would not increase from FY99 rates
  - Set rates 10% below benchmark
  - Adjust for competition and customer base to ensure revenues do not exceed costs by product line (voice, data, video)
- **Voice**
  - GTE Benchmarked major carrier rates
  - CONUS-CONUS benchmarked to FTS 2001 rate only
- **Data**
  - IDA benchmarked major provider rates
  - Benchmarked to closest comparable service (GTE)
- **Video**
  - AT&T only comparable service

Comparison of Revenues and Unit Costs*

		Revenues		
Service	**Unit Cost**	**Rates**	**SLB**	**% SLB**
Voice ($/min)	$0.13	$0.08	$0.05	38%
Data ($/kby)	$75.28	$27.10	$48.18	64%
Access Tails			$20.97	28%
Port Service			$27.21	36%
Video ($/min)	$2.77	$1.88	$0.89	32%
Transmsn ($/kby)	$27.58	$20.96	$6.62	24%

- **Data access tail costs included in SLB to mitigate cost of providing access to the backbone at remote locations.**

* **1 QTR FY00 workload and cost data**

Preliminary Estimate of Bills

($M)

	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07
DISN Cost	$522.2	$528.3	$640.0	$685.0	$690.6	$707.1	$731.3	$701.7
Revenue from Rates	$353.7	$350.7	$466.5	$508.4	$511.9	$524.1	$543.7	$519.7
Estimated SLB	$168.5	$174.2	$173.5	$176.5	$178.7	$183.0	$187.6	$181.9
Army	$44.6	$43.4	$43.7	$44.6	$45.2	$46.2	$47.0	$45.5
Navy/MC	$37.7	$54.0	$53.4	$55.1	$55.8	$57.1	$58.4	$56.7
Air Force	$64.3	$52.1	$51.9	$52.4	$52.7	$54.0	$55.3	$53.6
Defensewide	$21.7	$24.7	$24.5	$24.4	$19.8	$25.8	$26.1	$25.3

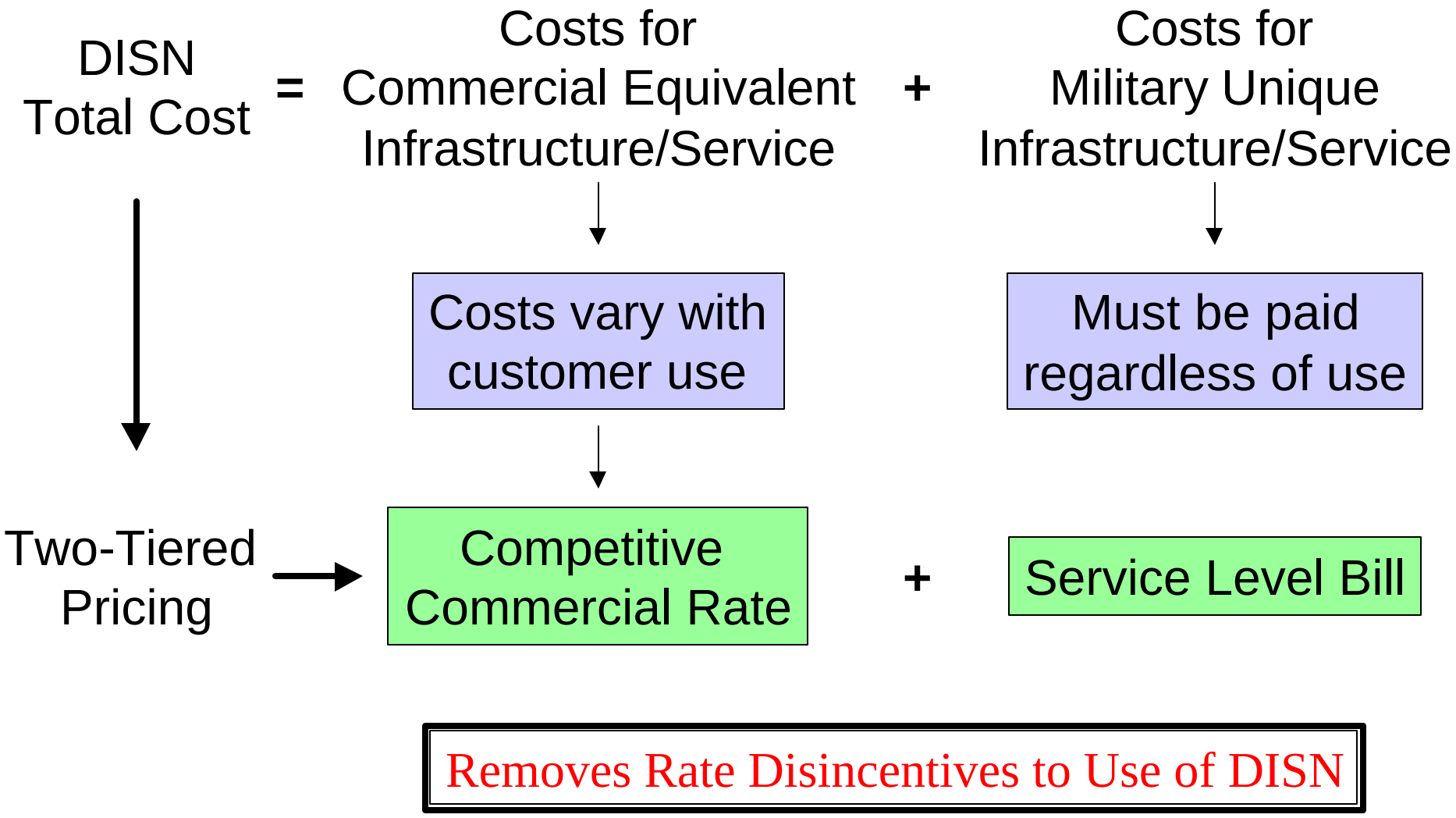
- Draft DISA POM 02-07 data
- Growth based on Draft DISA FY 01 Performance Contract
- Assumes cost reductions from upgrading access connections
- All depreciation recovered through rates
- FY00 allocation from PBD 426, FY01-07 allocation based on TOA

Recommendations

- **POM to these numbers**
- **Direct the Working Group to report back in one month on:**
  - **Alternative bases for allocating the SLB other than usage**
  - **Improvements to forecasting methods for DISN costs and revenues**

Back Ups

DISN Cost Structure



Maintenance

- **DISN equipment maintenance performed to ensure network performance**
  - **FY00 Performance Contract: Provide backbone system/circuit availability of greater than 99.95 percent for DSN, SIPRNET, NIPRNET, and Defense Red Switch Network Services within CONUS**
  - **Current availability YTD as of Apr 28:**
    - **CONUS backbone: 99.992 percent**
    - **All CONUS access: 99.977**
    - **NIPR latency: CONUS 100 ms, OCONUS 300 ms**
    - **VIDEO: 98 percent error free minutes worldwide**
    - **VOICE: CONUS 99 percent availability, OCONUS 98 percent all country to country availability**
- **70 percent of maintenance is outsourced**

Engineering Support

- Performs critical network design, testing, and analysis to ensure technical standards of network
- How does 3% expense compare to industry benchmark?

	All Engineering & Research Services (Budget % of Revenue)	
	Avg	Median
1997	9.49%	4.6%
1998	9.83%	4.6%
1999	9.83%	4.6%

1998 IT Spending and Staffing Survey Results, GartnerGroup, April 1, 1999

- 82 percent outsourced

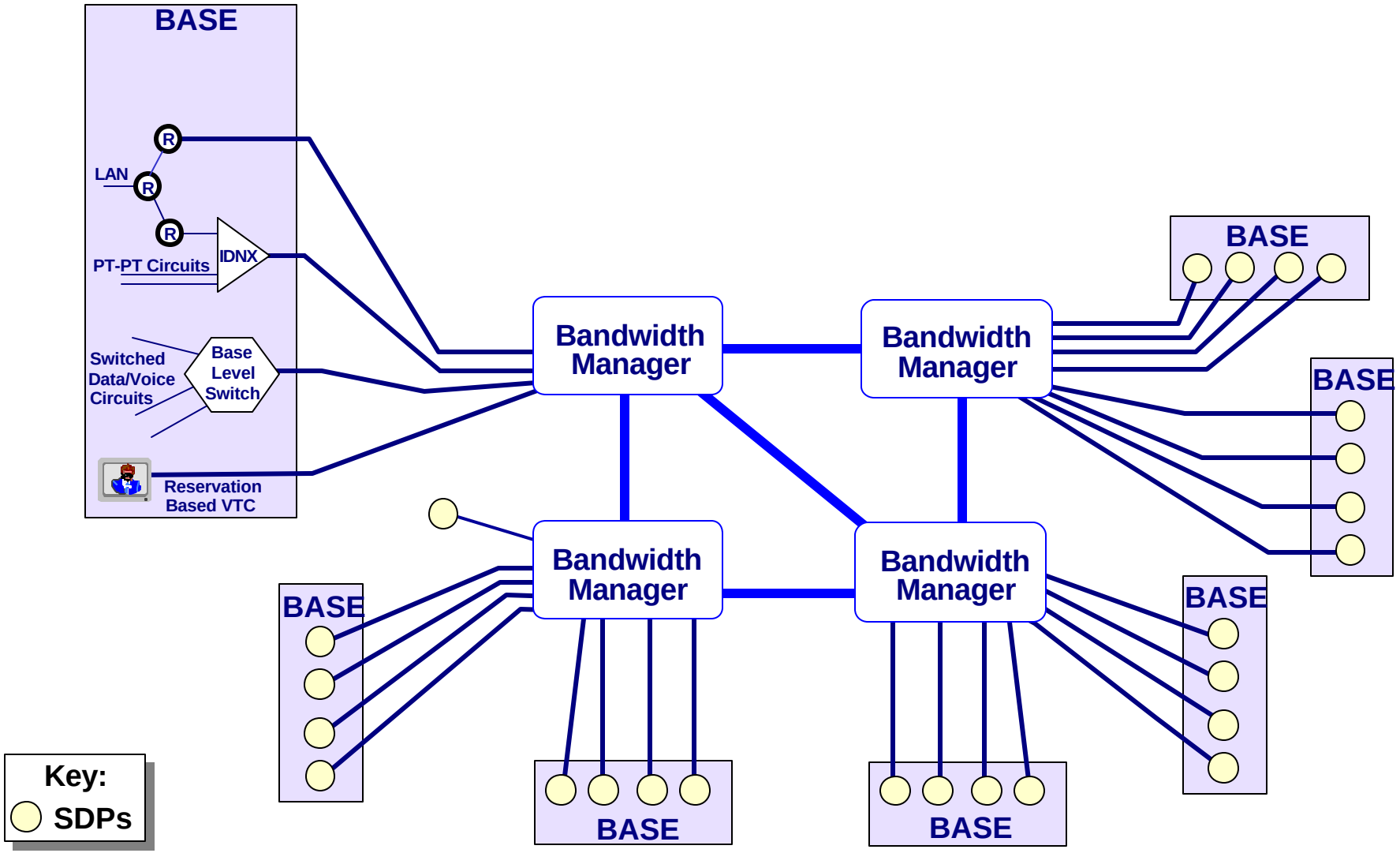
Transition to DISN Expansion

- **Very small transition expense to gain large cost reductions**
  - **DEP savings projections (PBD 417C)**

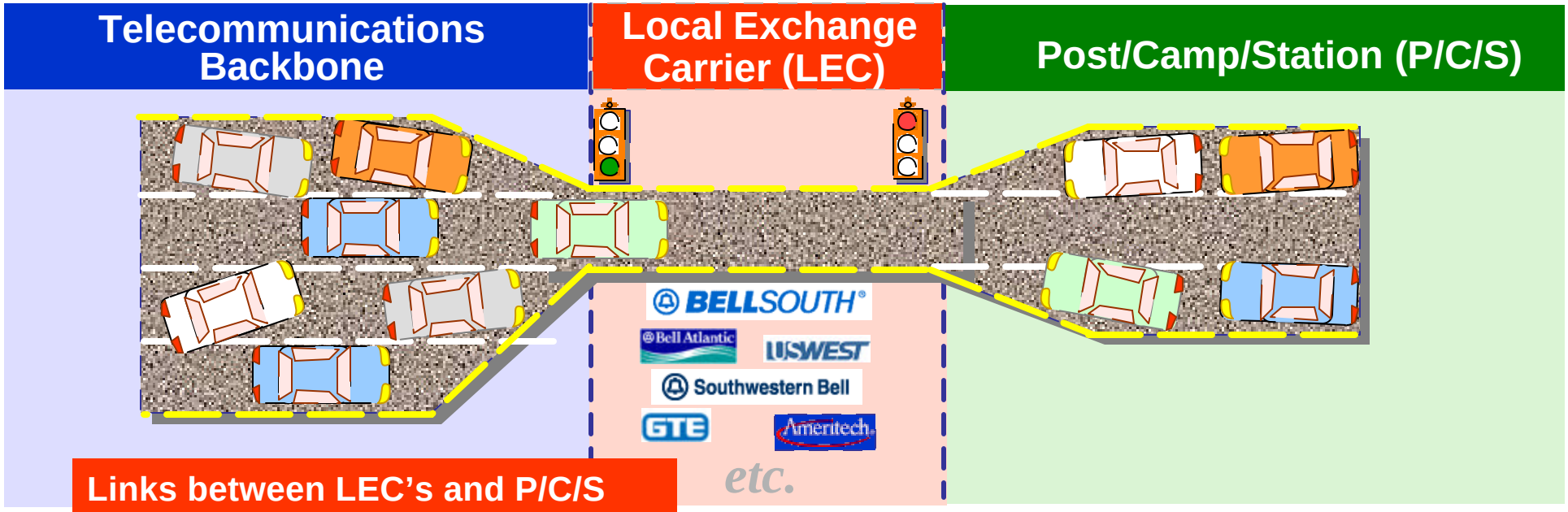
FY02	FY03	FY04	FY05
$ 10.4M	$ 25.5M	$ 91.4M	$ 114.6M

  - **FY 02, 03 net of $47.6M depreciation**

Backbone and Access



Access Bottleneck



Links between LEC's and P/C/S

- Single largest impediment to DISN
- Facilities not available
- P/C/S bandwidth requirement growing
- LECs take eight months/one year to complete (contract specifies 30 days)
- Over 100 TSOs past due
- Major impediment to GSA's FTS 2001 implementation

Not just a DISN problem -- Affects Telecoms Nationwide

Cost Elements

- **Access Transmission:**
  - **Commercial carrier transmission services from customer locations to the first entry point in the backbone infrastructure (AT&T, Bundespost, etc)**
- **Backbone Transmission:**
  - **Buying commercial carrier transmission services between one backbone piece of equipment to another backbone piece of equipment**

Cost Elements

(cont)

- **Network Operations:**
  - Travel - travel necessary for the installation, reconfiguration, or normal operation of a DISA managed program
  - Training - train newly assigned operations personnel at various sites (primarily military personnel)
  - Equipment Maint - routers, ATM equipment, cell multiplexers, circuits attached to DWCF equipment
  - Software Maint - software to view network outages (Panaview System)
  - Engineering Support - network systems design, circuit design, testing (JITC)
  - Switch O&M - operation and maintenance of DSN circuits

Cost Elements

(cont)

- **Network Operations (cont):**
  - **Equipment Purchases - DEB microwaves, signaling transfer points (STPs), multifunction switch upgrades, touch screen upgrades to reconfigure studios, NODE setup equipment, upgrade/replace NODEs, replacement cards**
  - **Software Purchases - licenses, ADIMSS equipment software**
  - **ECPs/Hardware/Software Upgrades - engineering reconfiguration**
  - **Contract Support - provisioning support (ARTEL and GTE contracts), data collection, processing, reporting, systems operation, network implementation and operation, field support personnel, operation centers, technical support**
  - **Transition/Other - CONUS migration to the new Transport-CONUS contract**

Cost Elements

(cont)

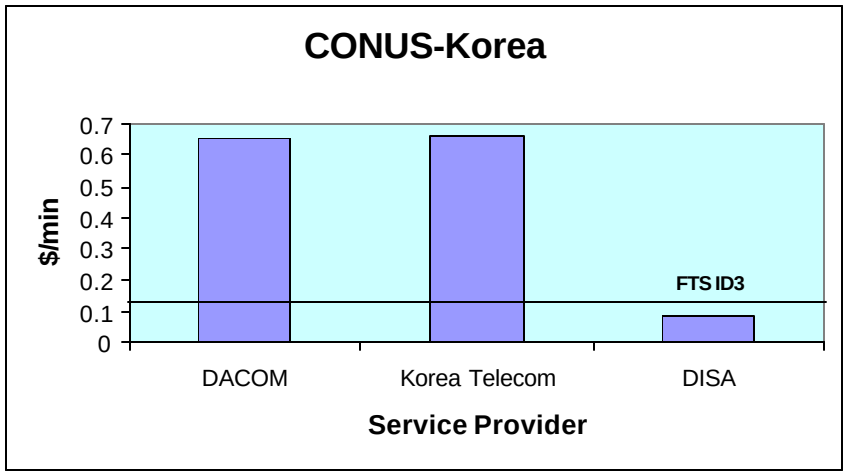
- **ROSC**
  - ROSC Government Salaries - 359 civilian personnel (Scott and Columbus)
  - ROSC Contractors - GTE contract
- **Network Management**
  - Equipment Maint - intra-Hawaiian Island network management
  - Software Maint - network management in Puerto Rico, provided by ROSCs for the other theaters
  - Equipment Purchases - equipment for the ADIMSS locations, equipment to establish network management capabilities
  - Software Purchases - software for ADIMSS equipment
  - Contractor Support - provisioning and network management service center support

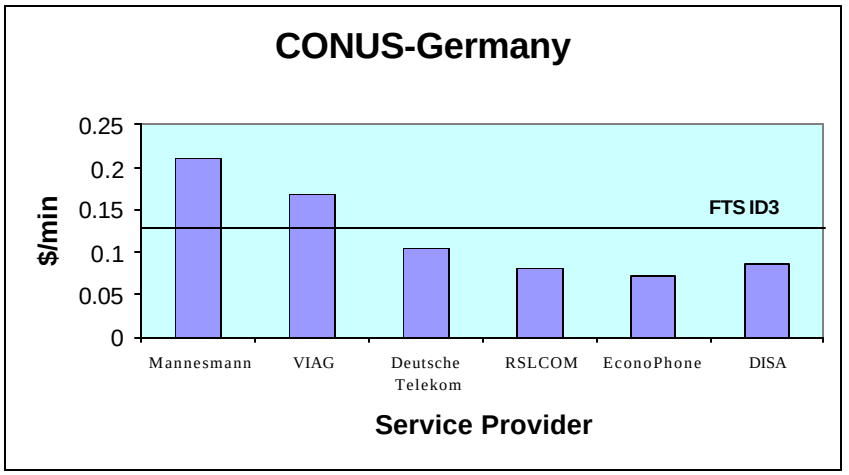
Cost Elements
(cont)

- **HQ Costs**
  - **DITCO World Wide Support**
    - **Travel, training, rents, supplies, utilities, equipment, communications, depreciation**
    - **DFAS and DMC contract support for accounting and computer services**
    - **Hardware and software maintenance**
    - **294 personnel**
  - **Comptroller - Financial reports**
  - **DISN Business Office - Rate development, pricing tools**

Commercial Voice Services Rates

FY00

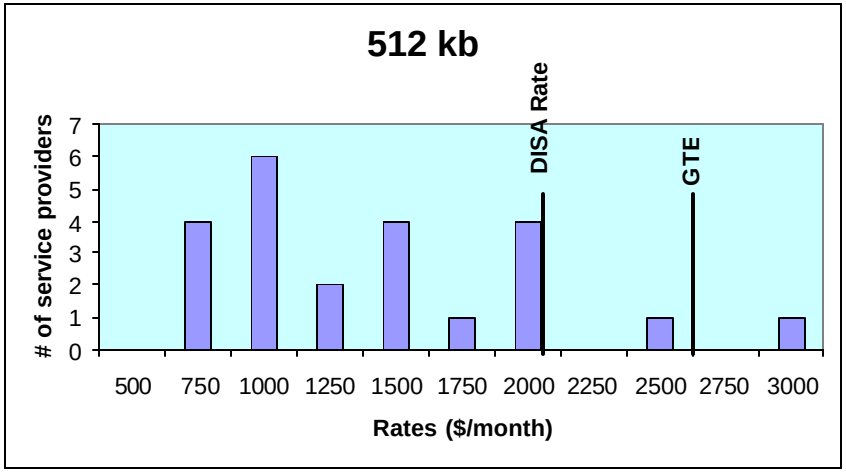


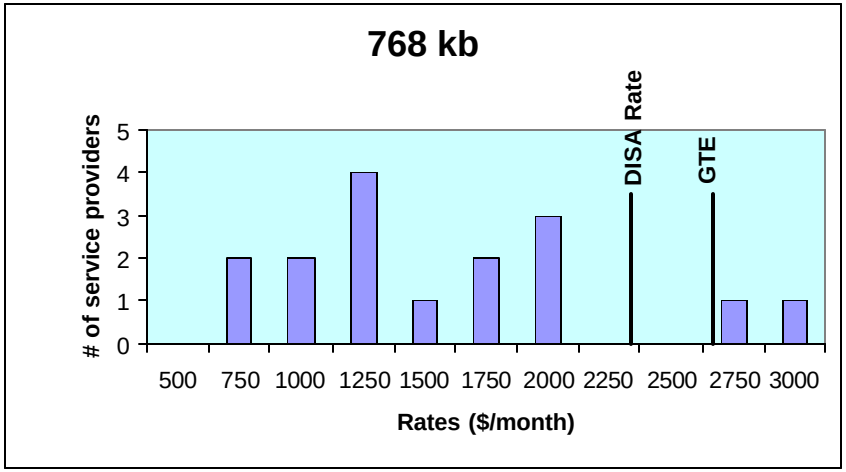


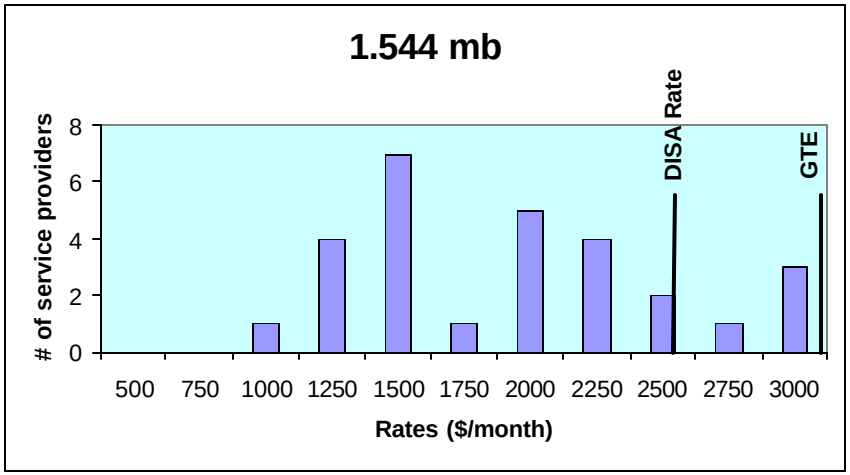
- Business hour rates shown.
- Benchmarks set at FTS International Direct Dial (FTS ID3) rates.

Commercial Data Service Rates

FY00

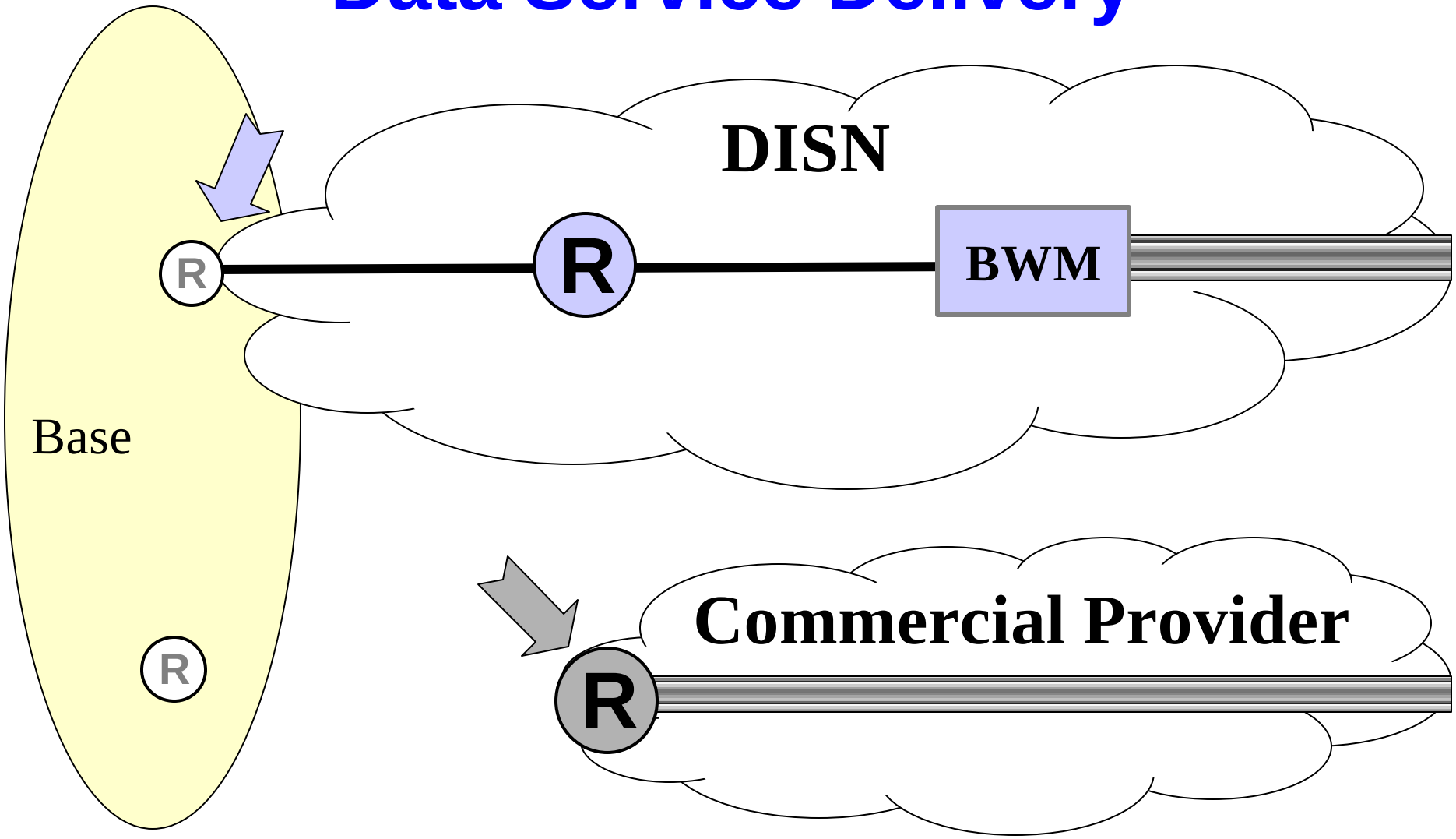






GTE selected as benchmark because it provides the same service as DISA:
24 X 7 Network ops, service from the access node to the base service delivery point, customer equipment, high rating for quality/availability of service, and points of presence within CONUS.

Data Service Delivery



Dividing the Service Level Bill

- **Cannot be usage based**
  - If usage drops to zero, there is still a bill to pay and divide
  - Would allow users to reduce their portion of the bill if their DISN usage decreases -- rewards migration off of DISN

- **Reasons to base split on total TOA**
  - Total TOA is directly related to military requirements and component readiness
  - Simplicity -- Specifically identified in DISA CSART assessment
  - Visibility at service level -- reinforces commercial pricing incentives
  - Services pay a DISN readiness bill independent of usage

TOA v Usage Allocation

($M)

	Usage	TOA	
	FY00	FY00	FY01
Army	$44.6	$43.0	$43.4
Navy/MC	$37.7	$52.0	$54.0
Air Force	$64.3	$50.0	$52.1
Defensewide	$21.7	$24.0	$24.7
Total	$168.3	$169.0	$174.2

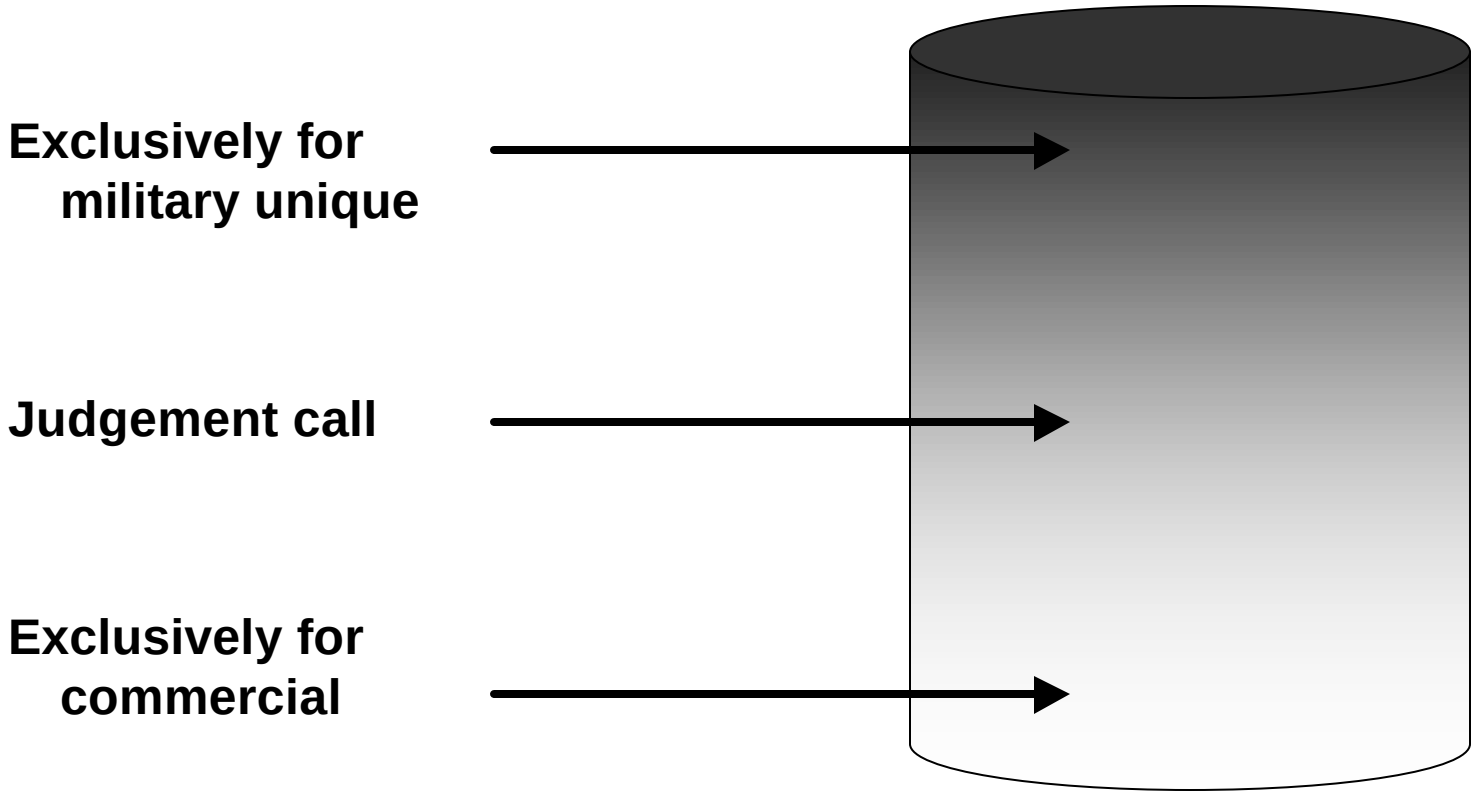
- **Directed by PBD 417**
  - FY 00 allocation based on amounts budgeted for DISA services in the PB to minimize gains and loses
  - FY 01 and subsequent year costs based on TOA

Why No Cost Allocation?

- **Allocation of costs to Tier I and II would have a large arbitrary element and has no advantage**
  - **Does not help cost discipline**
  - **May serve to remove from review cost covered by rates**
  - **Arbitrary assignment of costs harmful - gets rates wrong**
  - **Wrong rates influence usage decisions in the field**

- **DepSecDef decision - get rates right and accept burden of reviewing costs**

Notional Decomposition of DISA's Costs



No ready benchmark for costs

FY00 Methodology

- Developed engineering estimate of military capability as a proportion of all costs
- Benchmarked commercial services to set price targets for DISN rate-based services
- Allocated Tier 1 dollars to DISN services to set Tier 2 rate at or below commercial

FY00 Methodology

(cont)

- Established baseline of FY 99 actual revenues
- Inflated rate-based DISN services
- Allocated revenues into following categories
  - 1: Availability, capacity, surge (for normal customer base), assured service, global coverage
  - 2A: Security, positive control, multi-level precedence and pre-emption
  - 2B: Deployed warfighter reachback
  - 3: Make data services analogous to commercial

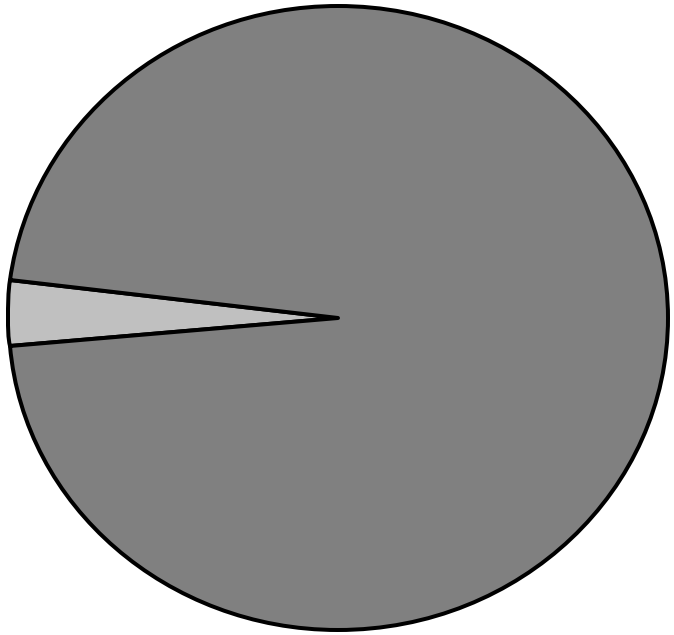
Category	FY00 Tier 1 Value
1	$79,787
2A	$20,093
2B	$48,314
3	$20,292
Total	**$168,486**

Commercial vs Government

FY00 DISN Cost Estimates

Government 3%

- Travel/Training
- ROSC Govt Salaries
- Headquarters



Commercial 97%

- Access Transmission
- Backbone Transmission
- Network Operations
- Network Management